

NEOTYPIIFICATION OF *CEROPEGIA PALUSTRIS* AND *LYONIA MARITIMA* (APOCYNACEAE: ASCLEPIADOIDEAE)

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ABSTRACT

Ceropegia palustris Pursh and *Lyonia maritima* Elliott (Apocynaceae: Asclepiadoideae) are currently recognized as synonyms of *Funastrum angustifolium* (Pers.) Liede & Meve. The diminutive vine, one of the most readily recognizable taxa among a number of taxonomically difficult climbing milkweeds in the southeastern United States, occurs primarily in swamps, hammocks, and salt marshes. A neotype is proposed here for *C. palustris*, which will automatically also serve as the type of *L. maritima*, as Elliott was well-aware that the two were synonymous. Additional relevant historical specimens of interest housed at BM, CHARL, and PH are also discussed.

RESUMEN

Ceropegia palustris Pursh y *Lyonia maritima* Elliott (Apocynaceae: Asclepiadoideae) se reconocen usualmente como sinónimos de *Funastrum angustifolium* (Pers.) Liede & Meve. Esta pequeña trepadora, que es uno de los taxa más fácilmente reconocibles entre un grupo taxonómicamente difícil de trepadoras del Sureste de los Estados Unidos, aparece primariamente en pantanos y lagunas saladas. Se propone aquí un neotipo para *C. palustris*, que servirá también automáticamente como tipo de *L. maritima*, porque Elliott estaba muy convencido de que los dos eran sinónimos. Se discuten también especímenes adicionales de relevancia histórica que se encuentran en BM, CHARL, y PH.

Ceropegia palustris Pursh and *Lyonia maritima* Elliott (Apocynaceae: Asclepiadoideae) are currently recognized as synonyms of *Funastrum angustifolium* (Pers.) Liede & Meve (= *Cynanchum angustifolium* Pers.; Liede & Meve 2003). The diminutive vine, one of the most readily recognizable taxa among a number of taxonomically difficult climbing milkweeds in the southeastern United States (Drapalik 1969; Sundell 1981; Rosatti 1989; Liede 1997), is known from the Atlantic and Gulf Coasts of the United States, Mexico, and Belize, as well as the Bahamas and West Indies (Radford et al. 1968; Correll & Correll 1982; Balick et al. 1999). It occurs primarily in swamps, hammocks, and salt marshes, where it constitutes a quite inconspicuous component of the flora. The taxon was first described as *Cynanchum angustifolium* by Christiaan Persoon (Syn. Pl. 1:274. 1805). In 1814, Frederick Pursh independently described the species as *Ceropegia palustris* (Fl. Amer. Sept. 1:184). Pursh's name was the basionym for at least five combinations published over the next century (see below). In 1817, Stephen Elliott published the name *Lyonia maritima* for the

taxon (Sketch Bot. S. Carolina 1:316), honoring John Lyon with a new genus, well-aware that Pursh had already described the taxon in *Ceropegia*. However, the conservation of *Lyonia* Nutt. (Ericaceae; 1818) against *Lyonia* Raf. (Polygonaceae; 1808) is automatically extended to *Lyonia* Elliott (ICBN, Art. 14.10; Greuter et al. 2000). Although the nomenclatural availability of *Lyonia* Elliott is moot, the issue of typification of Elliott's and Pursh's names remains of interest from an historical perspective as both men made important contributions to North American botany (Pursh 1814; Elliott 1817).

In his description of *Ceropegia palustris*, Pursh (1814) notes having seen a specimen in the Lyon herbarium. Liede and Meve (2003) list this specimen as the type, although without tracing it. Ewan & Ewan (1963) note that although John Lyon's journal has been saved, his herbarium, which apparently at one point had been left in Asheville, North Carolina (Gray 1842), has unfortunately been lost or destroyed. Additionally, no relevant specimen was found in BM, C, LIV, MANCH, PH, K, or OXF, herbaria known to house Pursh collections. In the absence of any specimens of *Funastrum angustifolium* known to have been seen by Pursh, a neotype must be designated. Unfortunately, the exact locality of Lyon's collection of the taxon cannot be ascertained. Lyon does not mention the taxon in his journal (Ewan & Ewan 1963). Further complicating matters is the fact that during Lyon's exploration of coastal Carolina, in 1803–1804 and later again in 1808, he collected from the southern border of South Carolina, northward to Wilmington, North Carolina (Ewan & Ewan 1963)—a rather expansive coastal strip of marshes. In the absence of a more narrowly definable locality, a neotype is thus chosen from the marshes of Charleston County (S.W. Leonard 2715 with A.E. Radford, NCU).

As indicated in the protologue of *Lyonia maritima*, Elliot was well-aware that *Ceropegia palustris* Pursh was a synonym (Elliott 1817). Thus, *L. maritima* Elliott is superfluous and illegitimate and the neotype chosen for *C. palustris* is automatically the type of *L. maritima*. However, from an historical perspective it remains of interest what specimens Elliott actually studied. His collections are known to be housed in the herbaria of CHARL and NY (Weatherby 1942; TLII). However, Weatherby (1942) makes no mention of a matching type for *Lyonia maritima* or its synonyms at CHARL. A search of the NY online type register has also proved unsuccessful. However, during a visit to CHARL to study Elliott's handwriting, an intriguing specimen was discovered—filed under *Asclepias* and mounted with material of *Asclepias pedicellata* (Fig. 1A). The specimen is clearly *Funastrum angustifolium* and is labelled "*Asclepias*" in Elliott's hand (Fig. 1B). Judging from the large script, CHARL curator Albert Sanders believes the specimen to stem from Elliott's early collecting days (pers. comm.). Apparently, Elliott's style of labelling, including the size of his script, changed noticeably over the years (Sanders, pers. comm.). Elliott was punctilious about

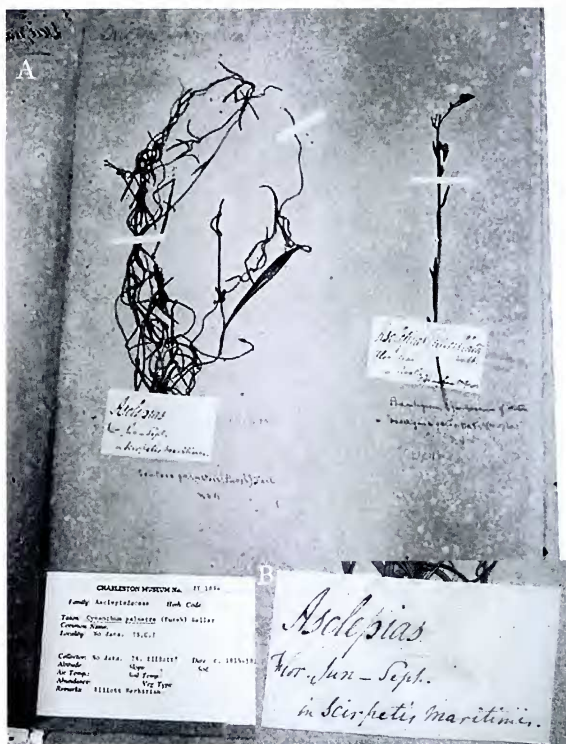


FIG. 1. A. Type of *Lyonia maritima* Elliott (specimen at left; CHARL). The specimen on the right is referred to *Asclepias pedicellata* Walter. B. (inset) Label detail of type of *Lyonia maritima* Elliott (CHARL).

noting the original collectors on labels associated with the plants given to him. No collector name appears on the label in question. Therefore, although no mention of *Lyonia* is made on the sheet, it is clear that this is a personal collection of the plant Elliott would later describe as *Lyonia maritima*. Weatherby (1942) and others likely missed the specimen as it would not be expected under *Asclepias*.

A search of PH by James Macklin resulted in an additional intriguing specimen. The specimen is clearly the taxon in question and bears (1) the name "*Vincetoxicum palustris* A. Gr." on the PH label, (2) a cut-out from an older sheet bearing Elliott's name ("S. Carol Elliott"), (3) another cut-out from an older sheet bearing the name "*Ceropegia palustris*," and "*Lyonia*," (4) a cut-out bearing the handwritten "Baldw Geo," and (5) a cut-out bearing the handwritten "pub. nom. *Ceropegia pal. Bald. Geo.*" This latter annotation appears to be in the characteristic small, dense hand of Muhlenberg. Although only one taxon is present, the sheet appears to bear material of mixed origin. The abbreviations *Geo* and *S. Carol* likely refer to the states of origin: Georgia and South Carolina, respectively. The presence of Elliott's name, along with the geographical origin South Carolina, indicates the material to have been Elliott's that was at some point sent to PH. Elliott corresponded with numerous botanists, including Muhlenberg and Baldwin. The other labels on the sheet indicate origin of respective material from Baldwin, who was in Georgia 1812–1813. Unfortunately, it is difficult to date this specimen. The taxon is not mentioned in the correspondence between Baldwin and Muhlenberg, reproduced in *Reliquiae Baldwinianae* (Darlington 1843). The presence of an annotation bearing the name *Lyonia*, could indicate that the specimen was either received following publication of Elliott's *Sketch* or prior to and subsequently annotated. In either case, Elliott appears to have been the sender of some of the material.

Another interesting specimen is the Elliott sheet housed in deCandolle's *Prodromus* herbarium (G-DC). Decaisne (1844) notes seeing this specimen in his *Prodromus* treatment. Fortunately, the *Prodromus* herbarium is available on microfiche. The specimen in question can be found on IDC microfiche no. 1541. V8: 588.41–595.32 [top row, 2nd specimen from right]. Two labels are found on the sheet. One label indicates the name used by Decaisne (i.e., *Seutera maritima*) and the other records the name as received by de Candolle from Elliott (i.e., *Lyonia maritima*).

As a final note, it appears that Thomas Walter collected this taxon in the course of his work on the *Flora Caroliniana* (Walter 1788)! Although the flowers (as well as the subtending sheet) have been eaten, it appears that the specimen found on Sheet 11 of his herbarium at BM and marked with a slashed 600 is indeed *Funastrum angustifolium* (Fig. 2). The glabrous specimen bears linear, sessile leaves and umbellate, 6–9-flowered inflorescences (based on the



FIG. 2. Collection of *Funastrum angustifolium* on Sheet 11 of the Thomas Walter Herbarium (BM).

number of pedicel stubs). The stems are flexuous and 'caved in' in a manner consistent with recent collections of the vine versus erect asclepiads. Had he described the taxon in his flora, his name would have priority over Persoon's. As it is, Walter's collection will remain one of the earliest known collections of the taxon, if not the earliest.

***Funastrum angustifolium* (Pers.) Liede & Meve, Nordic J. Bot. 22:587. 2003.**

Cynanchum angustifolium Pers., Syn. Pl. 1:274. 1805. TYPE "Hab. ad littora maris in Carolina," Michaux, fil. s.n. (HOLOTYPE P)

Ceropegia palustris Pursh, Fl. Amer. Sept. 1:184. 1814. *Vincetoxicum palustre* (Pursh) A. Gray, Syn. Fl. N. Amer. 2 (1):102. 1878. *Cynanchum palustre* (Pursh) Heller, Cat. N. Amer. Pl. 6. 1898. *Metastelma palustre* (Pursh) Schltr., Symb. Antill. 1(2):258. 1899. *Seutera palustris* (Pursh) Vail, Fl. South. U.S. 952. 1903. *Lyonia palustris* (Pursh) Small, Fl. Miami: 149. 1913. TYPE U.S.A. SOUTH CAROLINA: Charleston Co.: "Edge of salt marsh near the northern end of Folly Beach." S.W. Leonard 2715 with A.E. Radford (NEOTYPE: NCU, designated here).

Lyonia maritima Elliott, Sketch Bot. S. Carolina 1:316. 1817; nom. illeg. *Seutera maritima* (Elliott) Decne., in DC. Prodr. 8:590. 1844.

Amphistelma salinarum C. Wright ex Griseb., Cat. Pl. Cub 175. 1866. *Metastelma salinarum* (C. Wright ex Griseb.) C. Wright in Sauvalle, Anal. Acad. Ci. Habana 7:105. 1870. *Vincetoxicum salinarum* (C. Wright ex Griseb.) Benth. & Hook.f., Gen. pl. 2:762. 1876. *Cynanchum salinarum* (C. Wright ex Griseb.) Alain, Mem. Soc. Cubana Hist. Nat. 22:20. 1955. TYPE CUBA: Wright 2958 (ISOTYPES: GH, NY).

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REFERENCES

- BALICK, M.J., M.H. NEE, and D.E. ATHA. 1999. Checklist of the vascular plants of Belize, with common names and uses. New York Botanical Garden Press, New York.
- CORRELL, D.S. and H.B. CORRELL. 1982. Flora of the Bahama Archipelago (Including the Turks and Caicos Islands). Gantner Verlag, Vaduz.
- DARLINGTON, W. 1843. Reliquiae Baldwinianae: selections from the correspondence of the late William Baldwin, M.D. Kimber & Sharpless, Philadelphia.
- DRAPALIK, D.J. 1969. A biosystematic study of the genus *Matelea* in the southeastern United States. Ph.D. Dissertation, University of North Carolina, Chapel Hill.
- ELLIOTT, S. 1817. A sketch of the botany of South-Carolina and Georgia: Vol.1, pt. 4. J.R. Schenck, Charleston.
- EWAN, J. and N. EWAN. 1963. John Lyon, nurseryman and plant hunter and his journal, 1799–1814. Trans. Amer. Philos. Soc. 53:1–69.
- GRAY, A. 1842. Notes of a botanical excursion to the mountains of North Carolina, etc. Amer. J. Sci. 42:1–49.
- GREUTER, W., J. Mc NEILL, F.R. BARRIE, H.-M. BURDET, V. DEMOULIN, T.S. FILGUEIRAS, D.H. NICOLSON, P.C. SILVA, J.E. SKOG, P. TREHANE, N.J. TURLAND, and D.L. HAWKSWORTH. 2000. International Code of Botanical Nomenclature. Regnum Veg. 131. Koeltz Scientific Books, Königstein.
- HELLER, A.A. 1898. Catalogue of North American plants north of Mexico.
- LIEDE, S. 1997. American *Cynanchum* (Asclepiadaceae)—a preliminary infrageneric classification. Novon 7:172–181.
- LIEDE, S. and U. MEVE. 2003. Dissolution of *Cynanchum* sect. *Macbridea* (Apocynaceae – Asclepiadoideae). Nordic J. Bot. 22:587.
- MERRILL, E.D. 1949. Adventures in locating validly published, but unlisted binomials. Amer. J. Bot. 36:14–19.
- PURSH, F.T. 1814. Flora Americae septentrionalis. White, Cochrane, and Co., London.
- RADFORD, A.E., H.E. AHLES, and C.R. BELL. 1968. Manual of the vascular flora of the Carolinas. University of Chapel Hill Press, Chapel Hill.
- ROSATI, T.J. 1989. The genera of suborder Apocynineae (*Apocynaceae* and *Asclepiadaceae*) in the southeastern United States. J. Arnold Arbor. 70:443–514.
- SCHLECHTER, R. 1899. Asclepiadaceae. In: Symbolae antillanae, Urban, I., ed. Kraus Reprint, Ltd., Vaduz, Lichtenstein. Pp. 236–290.

- SMALL, J.K. 1896. Studies in the botany of the southeastern United States. V. Bull. Torrey Bot. Club 23:125–130.
- SUNDELL, E. 1981. The New World species of *Cynanchum* L. subgenus *Mellichampia* (A. Gray ex S. Wats.) Woods. (Asclepiadaceae). Evol. Monogr. 5:1–62.
- WALTER, T. 1788. Flora Caroliniana. Murray Printing Co. (Photolithographers), Cambridge.
- WEATHERBY, C.A. 1942. A list of type specimens in Elliott's herbarium. Rhodora 44:249–262.